

# Secure Coding

## Lab – 11

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### Creating secure and safe executable

**Task:**

Download and install visual studio (recent edition)

Write a C++ code of your own to build an executable and run the same.

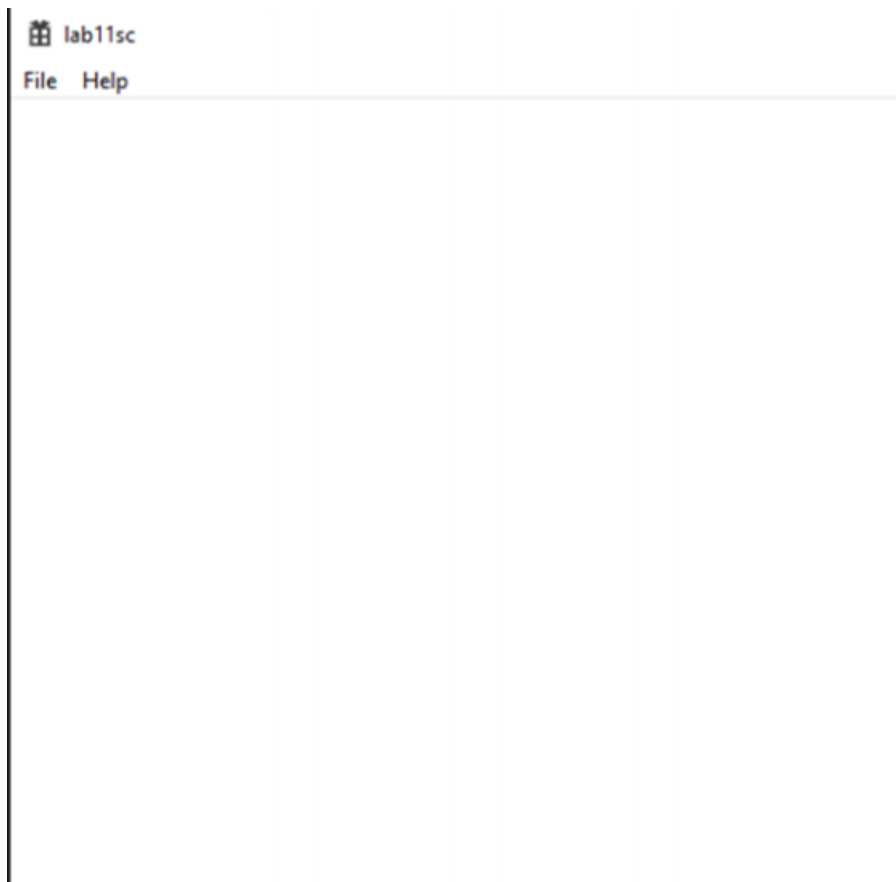
Download process explorer and verify the DEP & ASLR status Enable software DEP, ASLR and SEH in the visual studio and rebuild the same executable

Again, verify the DEP & ASLR status in the process explorer Report the same with separate screenshot - before and after enabling DEP & ASLR.

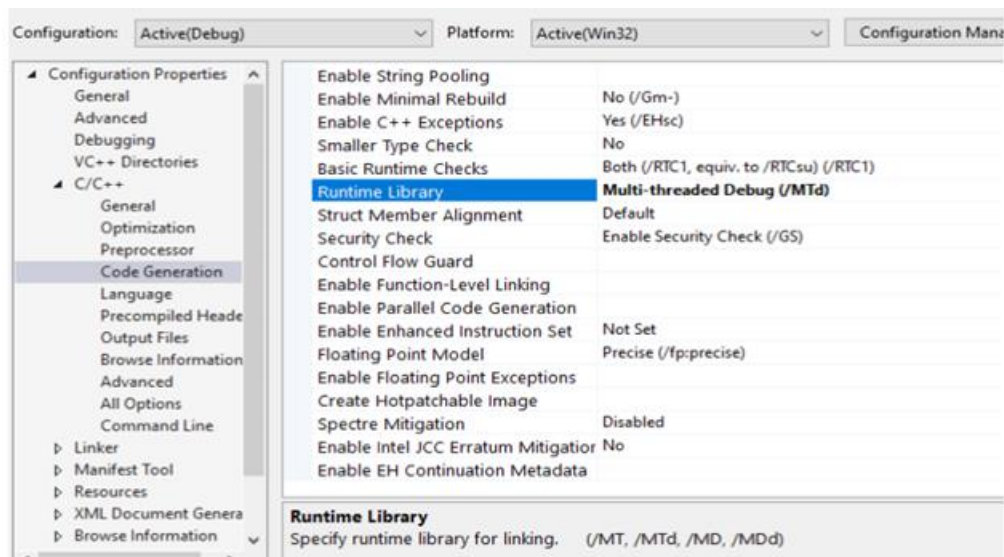
## Building an executable

```
5  #include "framework.h"
6  #include "lab11sc.h"
7
8  #define MAX_LOADSTRING 100
9
10 // Global Variables:
11 HINSTANCE hInst;                // current instance
12 WCHAR szTitle[MAX_LOADSTRING]; // The title bar text
13 WCHAR szWindowClass[MAX_LOADSTRING]; // the main window class name
14
15 // Forward declarations of functions included in this code module:
16 ATOM MyRegisterClass(HINSTANCE hInstance);
17 BOOL InitInstance(HINSTANCE, int);
18 LRESULT CALLBACK WndProc(HWND, UINT, WPARAM, LPARAM);
19 INT_PTR CALLBACK About(HWND, UINT, WPARAM, LPARAM);
20
21 int APIENTRY wWinMain(_In_ HINSTANCE hInstance,
22                     _In_opt_ HINSTANCE hPrevInstance,
23                     _In_ LPWSTR lpCmdLine,
24                     _In_ int nCmdShow)
25 {
26     UNREFERENCED_PARAMETER(hPrevInstance);
27     UNREFERENCED_PARAMETER(lpCmdLine);
28
29     // TODO: Place code here.
30
31     // Initialize global strings
32     LoadStringW(hInstance, IDS_APP_TITLE, szTitle, MAX_LOADSTRING);
33     LoadStringW(hInstance, IDC_LAB11SC, szWindowClass, MAX_LOADSTRING);
34     MyRegisterClass(hInstance);
35
36     // Perform application initialization:
37     if (!InitInstance (hInstance, nCmdShow))
38     {
39         return FALSE;
40     }
41 }
```

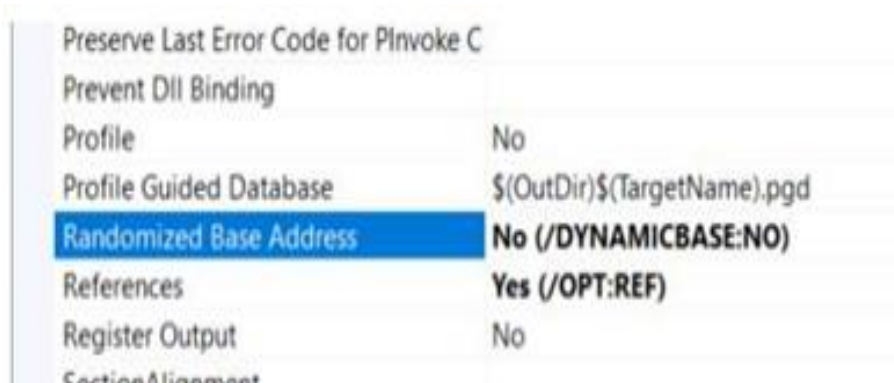
100 % No issues found



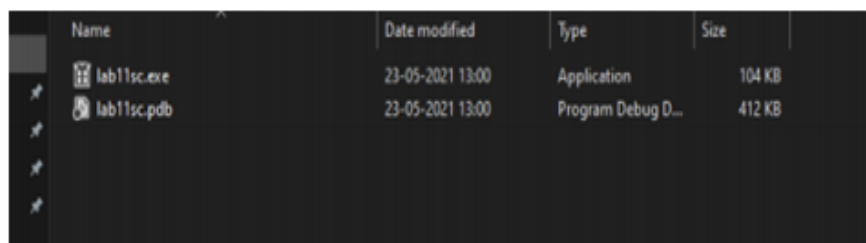
In Visual Studio DEP & ASLR is enabled by default, we have to disable them by going to property pages of the project build



Now disable the DEP & ASLR



Build the exe by setting the project build to release mode and exe is created



Now install the process explorer and run it, there if we run the process explorer and the exe we created at same time, our exe will be shown in process explorer

But Even though, we disabled the DEP and ASLR in the project build the process explorer is showing that DEP and ASLR is enabled.

Conclusion: Windows is programmed to enable the services by default. So even though an exe isn't built enabling the DEP and ASLR windows by default will enable it